

## 11/22/13     Agenda

- Warm Up
- Review Homework - Graphing Picture
- Section 5.1 - Finding Rate of Change from a Table
- Homework - Worksheet 5.1 day 1

Warmup:

- Grab a slip of paper
- Put your name on it
- Distribute & CLT

$$\begin{array}{r}
 \begin{array}{r}
 -8 \\
 +6 \\
 \hline
 -2
 \end{array}
 \end{array}$$

$$\begin{array}{r}
 +4(3 - 2x) + 6x - 1 \\
 \hline
 +12 - 8x + 6x - 1 \\
 \hline
 -2x + 11
 \end{array}$$

$$\begin{array}{r}
 +3 - 2x \\
 \hline
 +12 - 8x \\
 \hline
 +12 - 8x
 \end{array}$$

$$\begin{array}{r}
 +12 \\
 - 1 \\
 \hline
 +11
 \end{array}$$



## 5.1 - Finding Rate of Change from a Table

Starters:

Fill out the following tables:

1.  $y = 2x + 2$

2.  $y = -3x + 1$

x	y
0	2
1	4
2	6
3	8
4	10

x	y
-1	4
0	1
2	-5
4	-11
10	-29

Identifying  
Patterns:

+3 +3 +3  
...-9, -6, -3, 0, 3, 6, 9, 12...

11 -32

Rule: +3

...0, 2, 4, 6, 8, 10, 12...

Rule: +2

...2, 6, 10, 14, 18, 22...

Rule: +4

...20, 17, 14, 11, 8, 5, 2, -1...

Rule: -3

Rate of  
Change  
Definition:

The amount one quantity is changing in  
relation to another quantity.

Rate of Change	=	$\frac{\text{Change in Y's (the y pattern rule)}}{\text{Change in X's (the x pattern rule)}}$
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Real-Life Examples:

- a) Unit Rates (OZ/\$)
- MPG (miles per gallon)
- b) Feet Per Second

Notice all of these use division.

$$RoC = \frac{\Delta y}{\Delta x}$$

## 5.1 - Finding Rate of Change from a Table

Example 1:

Look back at the first example of the warm-up and see if we can find the Rate of Change...

$$\text{Rate of Change} = \frac{\text{Change in Y's}}{\text{Change in X's}} = \frac{+2}{+1} = 2$$

x	y
0	2
1	4
2	6
3	8
4	10

Find the RofC

Examples:

x	y
0	1
1	5
2	9
3	13
4	17

$$\text{R of C} = \frac{+4}{+1} = 4$$

x	y
-3	-3
-2	0
-1	3
0	6
1	9

$$\text{R of C} = \frac{+3}{+1} = 3$$

What if numbers are skipped?

Does the pattern still continue?

x	y
0	9
2	5
4	1
6	-3
8	-7

$$\text{R of C} = \frac{-4}{+2} = -2$$

x	y
-2	10
-1	9
0	8
1	7
5	3
10	-2
15	-7

$$\text{R of C} = \frac{-1}{+1} = -1$$

$$\frac{-5}{+5} = -1 \quad \frac{-4}{+4} = -1 \quad \frac{-10}{+10} = -1$$

## 5.1 - Finding Rate of Change from a Table

You Try!

x	y
-5	20
-4	16
-3	12
-2	8
-1	6

R of C = \_\_\_\_\_

x	y
3	1
5	5
8	11
9	13
10	15

R of C = \_\_\_\_\_

Complete the following tables.

Then find the Rate of Change.

x	y
-5	-2
-4	0
-3	2
-2	
-1	
2	

R of C = \_\_\_\_\_

x	y
1	
2	
3	10
4	13
5	16
8	

R of C = \_\_\_\_\_